

REMARKS/ARGUMENTS

Claims 1-40 are pending in the present application.

This Amendment is in response to the Office Action mailed January 10, 2008. In the Office Action, the Examiner rejected claims 1, 3-8, and 10-13, 15-20, and 22-25, 27-32, and 34-36 under 35 U.S.C. §102(e); and claims 2, 9, 14, 21, 26, and 33 under 35 U.S.C. §103(a). Reconsideration in light of the remarks made herein is respectfully requested.

Responses to Examiner's Arguments

(1) The Examiner alleges that Ayyagari discloses a network state information, citing to paragraphs 69-70 and 63-64 (Office Action, page 9, par. 7). Applicant respectfully disagrees. Ayyagari merely discloses the START_DISCOVERY_MSG transmitted by the CCo to indicate the beginning of a DISCOVERY period (Ayyagari, par. [0060]) and the CCO_NETCONFIG_MSG transmitted by a new device that has been selected as the new CCo or by the current CCo itself after network organization is completed (Ayyagari, par. [0070]), not a frame module to process a frame containing information regarding a local node in a first network, the information including discovery information and network state information.

In response to the START_DISCOVERY_MSG, the nodes broadcast the DISCOVERY_MSG (Ayyagari, par. [0064]). However, the CCO_NETCONFIG_MSG is sent *after* network organization is completed. The information in the DISCOVERY_MSG and the CCO_NETCONFIG_MSG are not contained within a single frame. Thus, there is no teaching of "a frame containing information... including discovery information and network state information."

(2) The Examiner alleges that Ayyagari discloses managing the information, citing to paragraphs 55, and 75-79 (Office Action, page 9, par. 8). Applicant respectfully disagrees. Ayyagari merely discloses every other node listening to DISCOVER_MSG transmissions and updating its DISCOVERED_NODE_LIST (Ayyagari, par. [0055]) and the topology table of the CCo being a tabulation of the DISCOVERED_NODE_LISTS for all nodes (Ayyagari, par. [0076]), not an information module to manage the information.

Since the DISCOVERED_NODE_LIST and the topology table merely deal with the information contained within the DISCOVER_MSG transmission, there is no teaching express or

inherent of managing the network information which the Examiner previously alleged is contained in the CCO_NETCONFIG_MSG. Since the information is delineated in the claims to include discovery information and network state information, Ayyagari does not disclose managing the information.

(3) The Examiner alleges that Ayyagari discloses an information module to manage the information, citing to paragraphs 43-44 (Office Action, page 9, par. 9). Applicant respectfully disagrees. The Examiner recites "the network organization algorithm and protocol are critical to the providing of connectivity, or networking, of all the nodes in the system" (Ayyagari, par. [0044]). There is no indication of "an information module managing the information" in this passage. Moreover, the Examiner previously alleged that managing the information is disclosed by the CCo maintaining the topology table. Since, as discussed above, the topology table does not deal with the network information, the CCo cannot be the information module.

Rejection Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1, 3-8, and 10-13, 15-20, and 22-25, 27-32, and 34-36 under 35 U.S.C. § 102(e) as being anticipated by U.S. Publication No. 2004/0174829 issued to Ayyagari ("Ayyagari"). Applicant respectfully traverses the rejection and submits that the Examiner has not met the burden of establishing a prima facie case of anticipation.

Ayyagari discloses a centralized network organization and topology discovery in ad-hoc network with central controller. The network in its operational mode consists of host nodes, a designated controller for the network called the Central Coordinator (CCo), and where appropriate, a set of Proxy Coordinators (PCo) to communicate with nodes that cannot directly communicate (in one link) with the CCo, or with other nodes in the network (Ayyagari, par. [0025]). The CCo periodically initiates a node discovery process. Every known node is allowed to transmit a DISCOVERY_MSG message in a contention free mode, using an allocation (frequencies and time slots) granted by the CCo. The DISCOVERY_MSG can simply contain the MAC address/TEI (Temporary Equipment Identifier) of the source device, or it may also contain the Frame number and time slots for future contention periods that follow the end of the

Discovery interval (Ayyagari, par. [0055], lines 1-9). Activity Indicator is an optional parameter indicating how busy a device is, in terms of its duty cycle (Ayyagari, par. [0064], lines 12).

Ayyagari does not disclose, either expressly or inherently, at least one of: (1) a frame module to process a frame containing information regarding a local node in a first network, the information including discovery information and network state information, the discovery information being represented in a common description; (2) an information module coupled to the frame module to manage the information; and (3) a communication module coupled to the frame module and the information module to manage communication between the local node and a remote node in a second network using the information, as recited in claim 1.

First, Ayyagari merely discloses the START_DISCOVERY_MSG transmitted by the CCo to indicate the beginning of a DISCOVERY period (Ayyagari, par. [0060]) and the CCO_NETCONFIG_MSG transmitted by a new device that has been selected as the new CCo or by the current CCo itself after network organization is completed (Ayyagari, par. [0070]), not a frame module to process a frame containing information regarding a local node in a first network, the information including discovery information and network state information. As discussed above, the information in the DISCOVERY_MSG and the CCO_NETCONFIG_MSG are not contained within a single frame. Thus, there is no teaching of "a frame containing information... including discovery information and network state information." (See Responses to Examiner's Arguments above for further details.)

Second, Ayyagari merely discloses every other node listening to DISCOVER_MSG transmissions and updating its DISCOVERED_NODE_LIST (Ayyagari, par. [0055]) and the topology table of the CCo being a tabulation of the DISCOVERED_NODE_LISTS for all nodes (Ayyagari, par. [0076]), not an information module to manage the information, as recited in claim 1. As discussed above, given that the Examiner alleges the network information is contained in the CCO_NETCONFIG_MSG, CCo cannot be the information module since the topology table does not account for the CCO_NETCONFIG_MSG information. (See Responses to Examiner's Arguments above for further details.)

Furthermore, the Examiner interprets the CCo as the frame module and as the information module (Office Action, page 2 and 3). However, the CCo cannot be both frame module and information module because they perform different functions as discussed above.

Third, Ayyagari merely discloses viable interconnections between nodes relating to two illustrative organizations, such as interconnection 40 between C and D (Ayyagari, par. [0043], lines 7-10; Fig. 1, ref. 40), not a communication module coupled to the frame module and the information module to manage communication using the information, as recited in claim 1. A viable interconnection is a communication link that may be created between nodes C and D. In contrast, communication module 230 manages communication between the IW node and a remote node in a second IW network and receives the IW information from the information module 220 (See, for example, Specifications, par. [0035]). A communication link is merely a connection to connect two nodes. It does not have the ability to manage the communication between the two nodes.

To anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Vergegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the...claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ 2d 1913, 1920 (Fed. Cir. 1989). Since the Examiner failed to show that Ayyagari teaches or discloses any one of the above elements, the rejection under 35 U.S.C. §102 is improper.

Therefore, Applicant believes that independent claims 1, 13, 25, and 37 and their respective dependent claims are distinguishable over the cited prior art references. Accordingly, Applicant respectfully requests the rejection under 35 U.S.C. §102(e) be withdrawn.

Rejection Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 2, 9, 14, 21, 26, and 33 under 35 U.S.C. §103(a) as being unpatentable over Ayyagari in view of U.S. Publication No. 2005/0073979 issued to Barber et al. ("Barber"). Applicant respectfully traverses the rejection and submits that the Examiner has not met the burden of establishing a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the

knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *MPEP* §2143, p. 2100-126 to 2100-130 (8th Ed., Rev. 5, August 2006). Applicant respectfully submits that there is no suggestion or motivation to combine their teachings, and thus no *prima facie* case of obviousness has been established.

Furthermore, the Supreme Court in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966), stated: "Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined." *MPEP* 2141. In *KSR International Co. vs. Teleflex, Inc.*, 127 S.Ct. 1727 (2007) (Kennedy, J.), the Court explained that "[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." The Court further required that an explicit analysis for this reason must be made. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR* 127 S.Ct. at 1741, quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). In the instant case, Applicant respectfully submits that there are significant differences between the cited references and the claimed invention and there is no apparent reason to combine the known elements in the manner as claimed, and thus no *prima facie* case of obviousness has been established.

Ayyagari discloses a centralized network organization and topology discovery in ad-hoc network with central controller as discussed above.

Barber discloses a visitor gateway in a wireless network. The 802.11 MAC defines special functional behavior for fragmentation of packets, medium reservation via RTS/CTS (request-to-send/clear-to-send) polling interaction, and point coordination (for time-bounded services) (Barber, par. [0012]).

Ayyagari and Barber, taken alone or in any combination, do not disclose or render obvious (1) a frame module to process a frame containing information regarding a local node in a first network, the information including discovery information and network state information, the discovery information being represented in a common description; (2) an information module coupled to the frame module to manage the information; (3) a communication module coupled to the frame module and the information module to manage communication between the local node and a remote node in a second network using the information, as recited in claim 1; (4) a frame builder to build the frame containing the information; (5) a frame transmitter coupled to the frame builder to transmit the frame to another local node in the first network or the remote node in the second network; (6) a frame poller coupled to the frame transmitter to provide a polling frame requesting for information of the remote node; and (7) a frame receiver to receive another frame from another local node in the first network or to receive a remote frame from the remote node, as recited in claims 2, 14, and 26.

Ayyagari merely discloses the DISCOVERY_MSG broadcast by the nodes and CCO_NETCONFIG_MSG transmitted by the CCo or a new device selected as CCo (Ayyagari, par. [0057-0064]; par. [0070]), not a frame builder to build the frame containing the information. As above, Ayyagari does not disclose a frame containing information... including discovery information and network state information, let alone, a frame builder to build the frame, a frame transmitter to transmit the frame, or a frame receiver to receive another frame, as recited in claims 2, 14, and 26.

In addition, with respect to the frame transmitter, Ayyagari merely discloses the BEACON_MSG being transmitted by the CCo periodically (Ayyagari, par. [0058]). The BEACON_MSG carries the identity of the transmitting device and may include the START_DISCOVERY_MSG (Ayyagari, par. [0058-0060]). Since the BEACON_MSG does not include the network state information, allegedly the CCO_NETCONFIG_MSG, or the discovery information, allegedly the DISCOVERY_MSG, the BEACON_MSG cannot be the frame transmitted by the frame transmitter. Moreover, the Examiner alleges that the CCo is the frame transmitter (Office Action, page 7). Previously, the Examiner alleged that the CCo was also the frame module and the information module. Each of these modules perform different functions such that they cannot all be the same module.

As discussed above, Ayyagari does not disclose or render obvious elements (1)-(3) as above. Accordingly, a combination of Ayyagari with any other references in rejecting claims 2, 9, 14, 21, 16, and 33, which depend on claims 1, 13, and 25, respectively, is improper.

Furthermore, Barber merely discloses that MAC defines special functional behavior for fragmentation of packets, medium reservation via RTS/CTS polling interaction (Barber, par. [0012], lines 17-20), or tunnel 1204 packages up traffic between visitor clients (Barber, par. [0103], lines 6-7), not a frame poller to provide a polling frame requesting for information of the remote node, or a frame transmitter to transmit the frame to another local node in the first network or the remote node in the second network, or a frame receiver to receive another frame from another local node in the first network or to receive a remote frame from the remote node.

The RTS/CTS protocol is merely used to reduce frame collisions. The RTS (request to send) frame is used to initiate a data transmission. The CTS (Clear to Send) is a reply to the RTS from the destination. The RTS/CTS protocol therefore merely involves two nodes that wish to transmit and receive frames. It does not involve requesting discovery information. Regarding the tunnel, it merely transports traffic to a firewall to allow a visitor client to access the Internet (Barber, par. [0103], lines 7-10). It does not transmit or receive a frame as recited in claims 2, 14, and 26. In fact, Barber specifically discloses that the tunnel does not send or receive traffic to or from the LAN (Barber, par. [0103], lines 10-11). Accordingly, Barber teaches away from the invention because traffic is not sent or received to or from the LAN.

The Examiner failed to establish a prima facie case of obviousness and failed to show there is teaching, suggestion, or motivation to combine the references. When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to: (A) The claimed invention must be considered as a whole; (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination; (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and (D) Reasonable expectation of success is the standard with which obviousness is determined. Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986). "When determining the patentability of a claimed invention which combined two known elements, 'the question is whether there is something in the prior art as a whole suggest the desirability, and thus the obviousness, of making the combination.'" In re Beattie, 974 F.2d

1309, 1312 (Fed. Cir. 1992), 24 USPQ2d 1040; Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 1462, 221 USPQ (BNA) 481, 488 (Fed. Cir. 1984). To defeat patentability based on obviousness, the suggestion to make the new product having the claimed characteristics must come from the prior art, not from the hindsight knowledge of the invention. Interconnect Planning Corp. v. Feil, 744 F.2d 1132, 1143, 227 USPQ (BNA) 543, 551 (Fed. Cir. 1985). To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the Examiner to show a motivation to combine the references that create the case of obviousness. In other words, the Examiner must show reasons that a skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the prior elements from the cited prior references for combination in the manner claimed. In re Rouffet, 149 F.3d 1350 (Fed. Cir. 1996), 47 USPQ 2d (BNA) 1453. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or implicitly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 USPQ 972, 973. (Bd.Pat.App.&Inter. 1985). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Furthermore, although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." In re Mills 916 F.2d at 682, 16 USPQ2d at 1432; In re Fritch, 972 F.2d 1260 (Fed. Cir. 1992), 23 USPQ2d 1780.

Moreover, the Examiner failed to establish the factual inquires in the three-pronged test as required by the *Graham* factual inquires. There are significant differences between the cited references and the claimed invention as discussed above. Furthermore, the Examiner has not made an explicit analysis on the apparent reason to combine the known elements in the fashion in the claimed invention. Accordingly, there is no apparent reason to combine the teachings of Ayyagari and Barber.

In the present invention, the cited references do not expressly or implicitly disclose any of the above elements. In addition, the Examiner failed to present a convincing line of reasoning

as to why a combination of Ayyagari and Barber is an obvious application of inter-wireless interactions using user discovery for AD-HOC environments, or an explicit analysis on the apparent reason to combine Ayyagari and Barber in the manner as claimed.

Therefore, Applicant believes that independent claims 1, 13, 25, and 37 and their respective dependent claims are distinguishable over the cited prior art references. Accordingly, Applicant respectfully requests the rejection under 35 U.S.C. §103(a) be withdrawn.

Appl. No. 10/815,401
Amdt. Dated April 10, 2008
Reply to Office Action of January 10, 2008

Conclusion

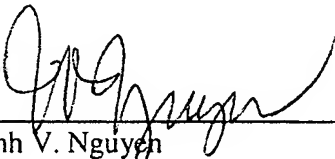
Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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